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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,430	02/18/2004	David R. Stanley	GP-303423	3492

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EXAMINER

BERTHEAUD, PETER JOHN

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/781,430

Applicant(s)

STANLEY ET AL.

Examiner

Peter J. Bertheaud

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-7, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayman 6,601,557 in view of Kopec 6,082,321 and Evans 6,955,045.

Hayman discloses an engine oil pump assembly comprising: a housing 24 defining an interior cavity and including a common inlet 68 and first and second outlets 32, 34; a shaft 36 extending longitudinally through the housing and having an external drive; a first pump mechanism 44 driven by the shaft and communicating with the common inlet and the first outlet 32 of the housing; a second pump mechanism 46 driven by the shaft and communicating with the common inlet and the second outlet 34 of the housing; a first pressure relief valve 78 connected to receive oil from the first pump mechanism 44 and to limit pressure to the first outlet 32; a second pressure relief valve 80 connected to receive oil from the second pump mechanism 46 and to limit pressure to the second outlet 34. Hayman further discloses that the oil pump mechanisms are gerotors (see configuration of 44 and 46) and that the first and second outlets each discharge oil to an independent oil circuit (see col. 3, lines 27-29). Hayman also discloses a method comprising the steps of: rotating the shaft 36 to operate the first

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and second pump mechanisms; drawing oil through the common inlet 68 with the first pump mechanism 44; drawing oil through the common inlet 68 with the second pump mechanism 46; supplying pressurized oil to the first 32 and second outlets 34 and to the first 78 and second pressure relief valves 80 with the first and second pump mechanisms. The remaining claimed subject matter, not shown by Hayman, can be found below.

Kopec teaches an oil pump assembly and method including a reservoir 14, an oil pump 20, an oil lubrication circuit 12. Kopec further teaches an outlet from the oil pump 20 that is connected to a pressure control valve 22. Kopec teaches that this pressure control valve is connected to receive oil from the pump mechanism and to limit pressure to the outlet by discharging excess oil flow to the reservoir (see col. 2, lines 46-49). Kopec also teaches a method comprising the steps of: supplying pressurized oil to the outlet and to the pressure control valve with the pump, thereby allowing the pressure control valve to control oil pressure at the outlet by discharging a portion of the oil to the reservoir (see col. 2, lines 46-49). Kopec teaches that this would be advantageous because it ensures that there is adequate oil pressure at the end of the lubrication circuit during a cold start condition.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the oil pump of Hayman by implementing the pressure control valve, into both of the positions of the current pressure relief valves, in order to reduce the wear and extend the life of moving parts throughout the engine (Kopec col. 2, lines 63-67).

Hayman in view of Kopec teaches the invention as claimed except for the following limitations taught by Evans.

Evans teaches an oil pump system including an oil pump 5 which pumps oil through an outlet line 10 to two connecting oil lines 11 and 12, and an oil reservoir 6. Evans further teaches that the reservoir is connected to supply supplemental inlet oil to the first 13 and second 14 oil supply mechanisms (see col. 2, lines 27-38) and that oil flow between the inlet of the housing and the first pump mechanism is restricted (see 20 and col. 2, lines 54-57). Evans discloses that the reservoir supplies additional oil flow to the first and second pump mechanisms (see col. 2, lines 27-38). Evans also discloses a method comprising the steps of: supplying the pump mechanisms with supplemental inlet oil from the common reservoir and providing increased flow from one of the pump mechanisms to supply additional oil to the common reservoir to provide additional supplemental inlet oil for the other pump mechanism (see col. 2, lines 31-50). Evans teaches that these aspects of the invention would be advantageous because the charge of oil in the system is maintained at a predetermined pressure.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the oil pump of Hayman in view of Kopec by supplying supplemental oil to the pump mechanisms as well as restricting the flow between the inlet housing and the reservoir, in order to maintain the charge of oil in the system at a predetermined pressure (Evans col. 2, lines 54-55).

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3. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayman 6,601,557 in view of Kopec 6,082,321 and Evans 6,955,045, and in further view of Nikaido 4,538,966.

Hayman in view of Kopec and Evans disclose the invention as discussed above. However, Hayman in view of Kopec and Evans do not disclose that the phase of the first pump, in relation to the second pump, is advanced in order to reduce flow pulsations.

Nikaido teaches an oil pump assembly including a front and rear body 1, 2 that houses a pair of first and second oil pumps 3, 4, as well as a pair of first and second spool valves 5, 6. Nikaido further teaches that the phase of the first pump, in relation to the second pump, is advanced in order to reduce flow pulsations (see col. 4, lines 24-27). Nikaido teaches that this would be advantageous because it makes for a smooth pumping action.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the oil pump assembly of Hayman in view of Kopec and Evans by advancing the phase of the first pump in relation to the second pump, in order to create a smooth pumping action (Nikaido, col. 4, lines 24-27).

4. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayman 6,601,557 in view of Kopec 6,082,321 and Evans 6,955,045, and in further view of Plenzler 6,810,845.

Hayman in view of Kopec and Evans disclose the invention as discussed above. However, Hayman in view of Kopec and Evans do not disclose that the first outlet

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supplies oil to an engine main bearing gallery and that the second outlet supplies oil to an engine cam gallery.

Plenzler teaches a lubrication system including an oil pump 46, an inlet 48, and an outlet 50. Plenzler also teaches that the pump 46 is connected through an oil filter 54 to the main oil feed 56, which then distributes the oil to a main bearing gallery. Plenzler further teaches that the main bearing gallery 60 connects with the cam gallery feed 62, which carries oil to a cam gallery 64. Plenzler teaches that this would be advantageous because oil can be supplied to the crankshaft main bearings, the connecting rod bearings, the camshaft cylinder bearings, and valve gear within the cylinder of the engine, all from one pump assembly.

Therefore, it would have been obvious to one skilled in the art at the time of invention to modify the oil pump assembly of Hayman in view of Kopec and Evans, which comprises two outlets, from two pumping mechanisms, connected to two oil systems for engines, by connecting the main bearing gallery to the first outlet and connecting the cam gallery directly to the second outlet, in order to lubricate the crankshaft main bearings, the connecting rod bearings, the camshaft cylinder bearings, and valve gear within the cylinder of the engine, all from one pump assembly (Plenzler col. 3, lines 31-45).

Conclusion

5. The prior art made of record, noted in the attached form 892, and not relied upon is considered pertinent to applicant's disclosure.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Bertheaud whose telephone number is (571) 272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ehud Gartenberg can be reached on (571) 272-4828. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



PJB

12/6/06



EHUD GARTENBERG
SUPERVISORY PATENT EXAMINER